

## Instructions

- This folder contains program codes and procedure files to compute the information matrix tests (IMTs) suggested by Cho and White (2011).
- The model assumption for this folder is Weibull duration model in Cho and White (2010). That is, the conditional density of duration data  $Y_t \in \mathbb{R}^+$  given explanatory variables  $\mathbf{X}_t \in \mathbb{R}^k$  is specified as

$$f(y|\mathbf{X}_t; \delta, \boldsymbol{\beta}, \gamma) = \delta \gamma \exp(\mathbf{X}_t' \boldsymbol{\beta}) y^{\gamma-1} \exp(-\delta \exp(\mathbf{X}_t' \boldsymbol{\beta}) y^\gamma),$$

where  $(\delta, \boldsymbol{\beta}, \gamma)$  is an element of a parameter space.

- You need GAUSS engine and CML sub-routine to compute the IMTs.
- To run the program, the following steps need to be taken:
  1. Unzip **linwei.zip**;
  2. Open **linear\_wei.prg**;
  3. Follow the instructions in the program file.
- Cautions:
  1. Dataset has to be defined in the form of  $n \times k$  matrix such that the first column contains the realizations of dependent variable, and the other columns contain the realizations of independent variables, where  $n$  is the sample-size, and  $k$  is the number of explanatory variables. The intercept term *cannot* be one of the independent variables.
  2. "bbb" stands for the number of bootstrapping. You can choose your preferred number for "bbb."
  3. Parameter space hasn't been constrained in this program.

## Reference

- Cho, J.S. and White, H. (2010): "Testing for Unobserved Heterogeneity in Exponential and Weibull Duration Models" *Journal of Econometrics*, 157, 458~480.
- Cho, J.S. and White, H. (2011): "Testing the Equality of Two Positive-Definite Matrices with Application to Information Matrix Testing," Discussion Paper, School of Economics, Yonsei University.